

L9 2 L7 AND PHOTOLITH?

=> d 19 1-

1. 5,478,606, Dec. 26, 1995, Method of manufacturing **ink** **jet** recording **head**; Norio Ohkuma, et al., 427/555; 216/27, 41, 67; 347/20, 45, 65; 427/240, 386; 430/286.1, 320, 324 [IMAGE AVAILABLE]

2. 5,332,466, Jul. 26, 1994, Liquid jet recording head manufacturing method; Minoru Nozawa, 216/27, 52; 347/63, 65 [IMAGE AVAILABLE]

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(FILE 'USPAT' ENTERED AT 13:29:13 ON 16 JUL 1997)

L1 1057 S INK JET HEAD

L2 2988 S INK JET (2A) ?HEAD

L3 8 S L2 AND CATIONIC POLYMERIZATION
E CANON KABUSHIKI KAISHA/AS

L4 15032 S E3

L5 4 S L4 AND L3

L6 1313 S L4 AND EPOXY

L7 4 S L5 AND EPOXY

L8 0 S L7 AND CURING AGENT

L9 2 S L7 AND PHOTOLITH?

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'=> d 13 1-

1. 5,540,768, Jul. 30, 1996, Aluminum pigments; Takashi Yamamoto, et al., 106/404, 479 [IMAGE AVAILABLE]
2. 5,527,941, Jun. 18, 1996, Composition comprising a novel phosphatized alicyclic compound; Takaaki Fujiwa, et al., 558/161, 198 [IMAGE AVAILABLE]
3. 5,510,428, Apr. 23, 1996, Compositions, epoxized compositions, a heat curable resin composition, an **epoxy** resin composition, radically polymerized compositions, a curable resin composition and a polymer having **epoxy** groups; Yoshiyuki Harano, et al., 525/438, 451, 529, 922; 528/103, 112, 166; 549/512, 513, 523, 525, 526 [IMAGE AVAILABLE]
4. 5,494,977, Feb. 27, 1996, Compositions, epoxized compositions, a heat curable resin composition, an **epoxy** resin composition, radically polymerized compositions, a curable resin composition and a polymer having **epoxy** groups; Yoshiyuki Harano, et al., 525/438, 405, 408, 430, 530, 532, 533; 528/297 [IMAGE AVAILABLE]
5. 5,478,606, Dec. 26, 1995, Method of manufacturing ink jet recording head; Norio Ohkuma, et al., 427/555; 216/27, 41, 67; 347/20, 45, 65; 427/240, 386; 430/286.1, 320, 324 [IMAGE AVAILABLE]
6. 5,191,027, Mar. 2, 1993, Composition comprising an **epoxy** compound; Takaaki Fujiwa, et al., 525/332.1, 386, 387; 526/281, 282, 283 [IMAGE AVAILABLE]
7. 5,140,091, Aug. 18, 1992, Compositions of polyether compounds, **epoxy** compounds and processes for production thereof based on 4-vinylcyclohexene-1-oxide; Katsuhisa Sakai, et al., 528/103; 525/529; 528/361, 366, 393 [IMAGE AVAILABLE]
8. 5,122,586, Jun. 16, 1992, Compositions of polyether compounds, **epoxy** compounds and processes for production thereof based on 4-vinylcyclohexene-1-oxide; Katsuhisa Sakai, et al., 528/103; 525/481, 523; 528/361, 393; 549/560 [IMAGE AVAILABLE]
9. 4,841,017, Jun. 20, 1989, Polyether compounds, **epoxy** resins and processes for production thereof; Takaaki Murai, et al., 525/327.3, 403; 528/365, 393; 549/524, 551, 554, 561 [IMAGE AVAILABLE]
10. 4,673,631, Jun. 16, 1987, Toner, charge-imparting material and composition containing metal complex; Hiroshi Fukumoto, et al., 430/110, 115; 524/204, 238; 556/132, 148 [IMAGE AVAILABLE]

11. 4,565,859, Jan. 21, 1986, Polyether compounds, **epoxy** resins, **epoxy** resin compositions, and processes for production thereof; Takaaki Murai, et al., 528/365; 525/327.3, 481, 523; 528/391, 407; 549/551, 554, 560; 560/82, 193, 231; 564/443; 568/54, 631, 669 [IMAGE AVAILABLE]

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(FILE 'USPAT' ENTERED AT 10:55:00 ON 16 JUL 1997)

L1 0 S OXYCLYCLOHEXANE

L2 14 S OXYCYCLOHEXANE

L3 11 S L2 AND EPOXY

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4> d 18 1-

1. 5,623,038, Apr. 22, 1997, Fluorine-containing polymers and preparation thereof; Michael P. Greuel, et al., 526/255, 247, 249 [IMAGE AVAILABLE]
2. 5,612,431, Mar. 18, 1997, Leaching of precious metal ore with fluoroaliphatic surfactant; Jennifer E. Waddell, et al., 526/243, 245 [IMAGE AVAILABLE]
3. 5,591,804, Jan. 7, 1997, Fluorinated onium salts, curable compositions containing same, and method of curing using same; William D. Coggio, et al., 525/276, 326.3, 340, 359.1, 359.3, 359.4, 374 [IMAGE AVAILABLE]
4. 5,550,273, Aug. 27, 1996, Process for preparing fluorocarbon fluoroalkanesulfonates; Patricia M. Savu, 558/54, 46, 47, 48, 51, 52 [IMAGE AVAILABLE]
5. 5,397,669, Mar. 14, 1995, Liquid toners for use with perfluorinated solvents; Prabhakara S. Rao, 430/108, 114, 116; 523/205; 524/462, 463; 526/242, 250 [IMAGE AVAILABLE]
6. 5,358,843, Oct. 25, 1994, Photothermographic elements containing silyl blocking groups; Kumars Sakizadeh, et al., 430/619, 607, 613, 614, 615, 617 [IMAGE AVAILABLE]
7. 5,286,352, Feb. 15, 1994, Electrochemical production of higher pentafluorosulfonyl acid fluorides; John C. Hansen, et al., 205/445 [IMAGE AVAILABLE]
8. 5,283,148, Feb. 1, 1994, Liquid toners for use with perfluorinated solvents; Prabhakara S. Rao, 430/114, 116, 119 [IMAGE AVAILABLE]
9. 5,159,105, Oct. 27, 1992, Higher pentafluorosulfanyl-fluoroaliphatic carbonyl and sulfonyl fluorides, and derivatives; John C. Hansen, et al., 560/125, 147, 223; 562/605, 825, 849; 568/842 [IMAGE AVAILABLE]

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US PAT NO: 5,623,038 [IMAGE AVAILABLE] L8: 1 of 9
ASSIGNEE: **Minnesota Mining and Manufacturing Company**, St. Paul,
MN (U.S. corp.)

DETDESC:

DETD(3)

The . . . groups. Generally, R.sub.f will have 1 to 20 carbon atoms, preferably 4 to 10, and will contain 40 to 83 **weight** **percent**, preferably 50 to 78 **weight** **percent** **fluorine**. The preferred compounds are those in which the R.sub.f group is fully or substantially completely fluorinated, as in the case. . .

DETDESC:

DETD(52)

A . . . charged with 13,500 g deionized water, 37.8 g KOH, 81 g ammonium perfluoro octanoate (commercially available from 3M Co. as **FLUORAD**.TM. FC 143 fluorochemical), 29.8 g Na.sub.2 SO.sub.3, 324 g of a 20% solution of perfluorohexyl sodium sulfinatate in water, and. . .
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US PAT NO: 5,612,431 [IMAGE AVAILABLE] L8: 2 of 9
ASSIGNEE: **Minnesota Mining and Manufacturing Company**, St. Paul,
MN (U.S. corp.)

SUMMARY:

BSUM(22)

The . . . being connected by a suitable linking group or covalent bond. The surfactants preferably contain at least about 5% by weight **fluorine**, i.e. carbon-bonded **fluorine**, more preferably at least about 10%, the predominant **amount** or essentially all of which is located in the fluoroaliphatic radical or radicals.

SUMMARY:

BSUM(36)

A . . . which at least 40% of the oxyalkylene repeat units are oxyethylene units. These fluorochemical oligomers have about 5 to 40 **weight** **percent**, more preferably about 10 to 30 **weight** **percent**, carbon-bonded **fluorine**, based on the weight of oligomer or polymer, the **fluorine** content residing in said plurality of pendent fluoroaliphatic radicals. These materials are preferably relatively low molecular weight, branched or lightly. . .

DETDESC:

DETD(4)

Fluorad.TM. Fluorochemical Surfactant FC-120 (available from 3M Co.), a 25% (wt) solids solution of C.sub.10 F.sub.21 SO.sub.3.sup.- H.sub.4 N.sup.+, was diluted. . .

DETDESC:

DETD(6)

Fluorad.TM. Fluorochemical Surfactant FC-171 (available from 3M Co.), C.sub.8 F.sub.17 SO.sub.2 N(C.sub.2 H.sub.5)C.sub.2 H.sub.4 O(C.sub.2 H.sub.4 O).sub.6.2 CH.sub.3, where 6.2 is. . .

DETDESC:

DETD(8)

Fluorad.TM. Fluorochemical Surfactant FC-135 (available from 3M Co.), a 50% (wt) active solution of C.sub.8 F.sub.17 SO.sub.2 N(H)CH.sub.2 CH.sub.2 CH.sub.2 N.sup.+. . .

DETDESC:

DET D (10)

The . . . (wt) sodium hydroxide aqueous solution and subsequent acidification was done with 50% (wt) aqueous H.sub.2 SO.sub.4. The addition of 3M **Fluorad**.TM. FC-75 gave a clear, 2-phase system. The lower phase was stripped and distilled to an essentially pure acid product, C.sub.5. . . .

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(FILE 'USPAT' ENTERED AT 10:04:04 ON 16 JUL 1997)

L1 992 S FLUORAD

L2 371 S L1 AND ((FLUORINATE? OR FLUORINE OR FLUORO) (P) (FLUORAD
)

E 3M COMPANY

E 3M COMPANY/AS

E MINNESOTA MINING AND MANUFACTURING COMPANY/AS

L3 6938 S E3

L4 98 S L3 AND FLUORAD

L5 0 S L4 AND % FLUORINE

L6 2 S L4 AND (% (2A) FLUORINE)

L7 2 S L4 AND (% (P) FLUORINE)

L8 9 S L4 AND ((QUANTIT? OR AMOUNT# OR WEIGHT PERCENT) (P) (FLU

ORI